

Articles in the special issues of CPAM commemorating the 75th anniversary of the Courant Institute are indicated by a "(75)" following the article title.

Albers, P.; Frauenfelder, U.; van Koert, O.; Paternain, G. P.: Contact Geometry of the Restricted Three-Body Problem, 229

Ancona, F.; Glass, O.; Nguyen, K. T.: Lower Compactness Estimates for Scalar Balance Laws, 1303

Armstrong, S. N.; Silvestre, L. E.; Smart, C. K.: Partial Regularity of Solutions of Fully Nonlinear, Uniformly Elliptic Equations, 1169

Arsénio, D.; Masmoudi, N.: Regularity of Renormalized Solutions in the Boltzmann Equation with Long-Range Interactions, 508

Avellaneda, M.; Kasyan, G.; Lipkin, M. D.: Mathematical Models for Stock Pinning near Option Expiration Dates (75), 949

Beceanu, M.: A Critical Center-Stable Manifold for Schrödinger's Equation in Three Dimensions, 431

Ben Arous, G. Preface: From the Director (75), 889

Ben Arous, G.; Gün, O.: Universality and Extremal Aging for Dynamics of Spin Glasses on Subexponential Time Scales, 77

Ben Arous, G.; Hammond, A.: Randomly Biased Walks on Subcritical Trees, 1481

Berestycki, H.; Hamel, F.: Generalized Transition Waves and Their Properties, 592

Bjorland, C.; Caffarelli, L.; Figalli, A.: Nonlocal Tug-of-War and the Infinity Fractional Laplacian, 337

Bramson, M.; Zeitouni, O.: Tightness of the Recentered Maximum of the Two-Dimensional Discrete Gaussian Free Field, 1

Caffarelli, L.: see Bjorland, C.

Cappell, S. E.; Maxim, L. G.; Schürmann, J.; Shaneson, J. L.: Equivariant Characteristic Classes of Singular Complex Algebraic Varieties (75), 1722

Cha, J. C.; Orr, K. E.: L^2 -Signatures, Homology Localization, and Amenable Groups, 790

Chae, D.; Constantin, P.; Córdoba, D.; Gancedo, F.; Wu, J.: Generalized Surface Quasi-Geostrophic Equations with Singular Velocities, 1037

Chatterjee, S.; Kirkpatrick, K.: Probabilistic Methods for Discrete Nonlinear Schrödinger Equations, 727

Cheeger, J.: Quantitative Differentiation: A General Formulation (75), 1641

Chen, X.; Wang, B.: Space of Ricci Flows I, 1399

Childress, S.; Shelley, M.; Zhang, J.: Fluid-Structure Interactions: Research in the Courant Institute's Applied Mathematics Laboratory (75), 1697

Constantin, P.: see Chae, D.

Córdoba, D.: see Chae, D.

Danchin, R.; Mucha, P. B.: A Lagrangian Approach for the Incompressible Navier-Stokes Equations with Variable Density, 1458

de Pablo, A.; Quirós, F.; Rodriguez, A.; Vázquez, J. L.: A General Fractional Porous Medium Equation, 1242

Dull, W.-P.: Validity of the Korteweg-de Vries Approximation for the Two-Dimensional Water Wave Problem in the Arc Length Formulation, 381

Figalli, A.: see Bjorland, C.

Francfort, G. A.; Giacomini, A.: Small-Strain Heterogeneous Elastoplasticity Revisited, 1185

Frauenfelder, U.: see Albers, P.

Friedman, G.: Corrigendum: Intersection Homology with Field Coefficients: K -Witt Spaces and K -Witt Bordism, 1639

Gallay, T.; Serre, D.: Numerical Measure of a Complex Matrix, 287

Gancedo, F.: see Chae, D.

Gantert, N.; Mathieu, P.; Piatnitski, A.: Einstein Relation for Reversible Diffusions in a Random Environment, 187

Giacomini, A.: see Francfort, G. A.

Glass, O.: see Ancona, F.

Gün, O.: see Ben Arous, G.

Güntürk, C. S.: Mathematics of Analog-to-Digital Conversion (75), 1671

Hamel, F.: see Berestycki, H.

Hammond, A.: see Ben Arous, G.

Harvey, D.; Hassett, B.; Tschinkel, Y.: Characterizing Projective Spaces on Deformations of Hilbert Schemes of K3 Surfaces, 264

Hassett, B.: see Harvey, D.

Huang, X.; Li, J.; Xin, Z.: Global Well-Posedness of Classical Solutions with Large Oscillations and Vacuum to the Three-Dimensional Isentropic Compressible Navier-Stokes Equations, 549

Hynd, R.: The Eigenvalue Problem of Singular Ergodic Control, 649

Jiang, R.; Koskela, P.: Isoperimetric Inequality from the Poisson Equation via Curvature, 1145

Kasyan, G.: see Avellaneda, M.

Katayama, S.; Ozawa, T.; Sunagawa, H.: A Note on the Null Condition for Quadratic Nonlinear Klein-Gordon Systems in Two Space Dimensions, 1285

Khot, S.; Naor, A.: Grothendieck-Type Inequalities in Combinatorial Optimization (75), 992

Kirkpatrick, K.: see Chatterjee, S.

Koskela, P.: see Jiang, R.

Li, J.: see Huang, X.

Lin, F.: Some Analytical Issues for Elastic Complex Fluids (75), 893

Lin, F.; Pan, X.-B.; Wang, C.: Phase Transition for Potentials of High-Dimensional Wells, 833

Lipkin, M. D.: see Avellaneda, M.

Lu, J.; Yang, X.: Convergence of Frozen Gaussian Approximation for High-Frequency Wave Propagation, 759

Majda, A. J.: Challenges in Climate Science and Contemporary Applied Mathematics (75), 920

Mallat, S.: Group Invariant Scattering, 1331

Masmoudi, N.: see Arsénio, D.

Mathieu, P.: see Gantert, N.

Maxim, L. G.: see Cappell, S. E.

McLaughlin, D.: Introduction: Courant Institute at 75 (75), 891

Mo, M. Y.: Rank 1 Real Wishart Spiked Model, 1528

Mucha, P. B.: see Danchin, R.

Naor, A.: see Khot, S.

Nguyen, H.-M.: Approximate Cloaking for the Helmholtz Equation via Transformation Optics and Consequences for Perfect Cloaking, 155

Nguyen, K. T.: see Ancona, F.

Orr, K. E.: see Cha, J. C.

Ozawa, T.: see Katayama, S.

Pan, X.-B.: see Lin, F.

Paternain, G. P.: see Albers, P.

Piatnitski, A.: see Gantert, N.

Quirós, F.: see de Pablo, A.

Rodríguez, A.: see de Pablo, A.

Schneider, G.; Wayne, C. E.: Corrigendum: Long-Wave Limit for the Water Wave Problem, 587

Schürmann, J.: see Cappell, S. E.

Serre, D.: see Gallay, T.

Shaneson, J. L.: Cappell, S. E.

Sheffield, S.; Smart, C. K.: Vector-Valued Optimal Lipschitz Extensions, 128

Shelley, M.: see Childress, S.

Silvestre, L. E.: see Armstrong, S. N.

Singer, A.; Wu, H.-T.: Vector Diffusion Maps and the Connection Laplacian, 1067

Smart, C. K.: see Armstrong, S. N.

Smart, C. K.: see Sheffield, S.

Sunagawa, H.: see Katayama, S.

Tschinkel, Y.: see Harvey, D.

van Koert, O.: see Albers, P.

Vanden-Eijnden, E.; Weare, J.: Rare Event Simulation of Small Noise Diffusions (75), 1770

Vázquez, J. L.: see de Pablo, A.

Wang, B.: see Chen, X.

Wang, C.: see Lin, F.

Wang, Q.: Improved Breakdown Criterion for Einstein Vacuum Equations in CMC Gauge, 21

Wayne, C. E.: see Schneider, G.

Weare, J.: see Vanden-Eijnden, E.

Weitzner, H.: Studies in the Dynamics of a Plasma (75), 975

Wu, H.-T.: see Singer, A.

Wu, J.: see Chae, D.

Xin, Z.: see Huang, X.

Yang, X.: see Lu, J.

Zeitouni, O.: see Bramson, M.

Zhang, J.: see Childress, S.

Zhang, P.; Zheng, Y.: Energy Conservative Solutions to a One-Dimensional Full Variational Wave System, 683

Zheng, Y.: see Zhang, P.

Communications on
PURE AND APPLIED MATHEMATICS

Contents of Volume LXV, Nos. 1–12, 2012

NUMBER 1, JANUARY

Tightness of the Recentered Maximum of the Two-Dimensional Discrete Gaussian Free Field <i>M. Bramson and O. Zeitouni</i>	1
Improved Breakdown Criterion for Einstein Vacuum Equations in CMC Gauge <i>Q. Wang</i>	21
Universality and Extremal Aging for Dynamics of Spin Glasses on Subexponential Time Scales <i>G. Ben Arous and O. Gün</i>	77
Vector-Valued Optimal Lipschitz Extensions <i>S. Sheffield and C. K. Smart</i>	128

NUMBER 2, FEBRUARY

Approximate Cloaking for the Helmholtz Equation via Transformation Optics and Consequences for Perfect Cloaking <i>H.-M. Nguyen</i>	155
Einstein Relation for Reversible Diffusions in a Random Environment <i>N. Gantert, P. Mathieu, and A. Piatnitski</i>	187
Contact Geometry of the Restricted Three-Body Problem <i>P. Albers, U. Frauenfelder, O. van Koert, and G. P. Paternain</i>	229
Characterizing Projective Spaces on Deformations of Hilbert Schemes of K3 Surfaces <i>D. Harvey, B. Hassett, and Y. Tschinkel</i>	264

NUMBER 3, MARCH

Numerical Measure of a Complex Matrix <i>T. Gallay and D. Serre</i>	287
Nonlocal Tug-of-War and the Infinity Fractional Laplacian <i>C. Bjorland, L. Caffarelli, and A. Figalli</i>	337
Validity of the Korteweg–de Vries Approximation for the Two-Dimensional Water Wave Problem in the Arc Length Formulation <i>W.-P. Döll</i>	381

NUMBER 4, APRIL

A Critical Center-Stable Manifold for Schrödinger's Equation in Three Dimensions <i>M. Beceanu</i>	431
Regularity of Renormalized Solutions in the Boltzmann Equation with Long-Range Interactions <i>D. Arsénio and N. Masmoudi</i>	508
Global Well-Posedness of Classical Solutions with Large Oscillations and Vacuum to the Three-Dimensional Isentropic Compressible Navier-Stokes Equations <i>X. Huang, J. Li, and Z. Xin</i>	549

NUMBER 5, MAY

Corrigendum: Long-Wave Limit for the Water Wave Problem <i>G. Schneider and C. E. Wayne</i>	587
Generalized Transition Waves and Their Properties <i>H. Berestycki and F. Hamel</i>	592
The Eigenvalue Problem of Singular Ergodic Control <i>R. Hynd</i>	649
Energy Conservative Solutions to a One-Dimensional Full Variational Wave System <i>P. Zhang and Y. Zheng</i>	683
Probabilistic Methods for Discrete Nonlinear Schrödinger Equations <i>S. Chatterjee and K. Kirkpatrick</i>	727

NUMBER 6, JUNE

Convergence of Frozen Gaussian Approximation for High-Frequency Wave Propagation <i>J. Lu and X. Yang</i>	759
L^2 -Signatures, Homology Localization, and Amenable Groups <i>J. C. Cha and K. E. Orr</i>	790
Phase Transition for Potentials of High-Dimensional Wells <i>F. Lin, X.-B. Pan, and C. Wang</i>	833

NUMBER 7, JULY

Preface: From the Director <i>G. Ben Arous</i>	889
Introduction: Courant Institute at 75 <i>D. McLaughlin</i>	891
Some Analytical Issues for Elastic Complex Fluids <i>F. Lin</i>	893
Challenges in Climate Science and Contemporary Applied Mathematics <i>A. J. Majda</i>	920
Mathematical Models for Stock Pinning near Option Expiration Dates <i>M. Avellaneda, G. Kasyan, and M. D. Lipkin</i>	949
Studies in the Dynamics of a Plasma <i>H. Weitzner</i>	975
Grothendieck-Type Inequalities in Combinatorial Optimization <i>S. Khot and A. Naor</i>	992

NUMBER 8, AUGUST

Generalized Surface Quasi-Geostrophic Equations with Singular Velocities <i>D. Chae, P. Constantin, D. Córdoba, F. Gancedo, and J. Wu</i>	1037
Vector Diffusion Maps and the Connection Laplacian <i>A. Singer and H.-T. Wu</i>	1067
Isoperimetric Inequality from the Poisson Equation via Curvature <i>R. Jiang and P. Koskela</i>	1145
Partial Regularity of Solutions of Fully Nonlinear, Uniformly Elliptic Equations <i>S. N. Armstrong, L. E. Silvestre, and C. K. Smart</i>	1169

NUMBER 9, SEPTEMBER

Small-Strain Heterogeneous Elastoplasticity Revisited <i>G. A. Francfort and A. Giacomini</i>	1185
A General Fractional Porous Medium Equation <i>A. de Pablo, F. Quirós, A. Rodríguez, and J. L. Vázquez</i>	1242
A Note on the Null Condition for Quadratic Nonlinear Klein-Gordon Systems in Two Space Dimensions <i>S. Katayama, T. Ozawa, and H. Sunagawa</i>	1285
Lower Compactness Estimates for Scalar Balance Laws <i>F. Ancona, O. Glass, and K. T. Nguyen</i>	1303

NUMBER 10, OCTOBER

Group Invariant Scattering <i>S. Mallat</i>	1331
Space of Ricci Flows I <i>X. Chen and B. Wang</i>	1399
A Lagrangian Approach for the Incompressible Navier-Stokes Equations with Variable Density <i>R. Danchin and P. B. Mucha</i>	1458

NUMBER 11, NOVEMBER

Randomly Biased Walks on Subcritical Trees <i>G. Ben Arous and A. Hammond</i>	1481
Rank 1 Real Wishart Spiked Model <i>M. Y. Mo</i>	1528
Corrigendum: Intersection Homology with Field Coefficients: K-Witt Spaces and K-Witt Bordism <i>G. Friedman</i>	1639

NUMBER 12, DECEMBER

Quantitative Differentiation: A General Formulation <i>J. Cheeger</i>	1641
Mathematics of Analog-to-Digital Conversion <i>C. S. Güntürk</i>	1671
Fluid-Structure Interactions: Research in the Courant Institute's Applied Mathematics Laboratory <i>S. Childress, M. Shelley, and J. Zhang</i>	1697
Equivariant Characteristic Classes of Singular Complex Algebraic Varieties <i>S. E. Cappell, L. G. Maxim, J. Schürmann, and J. L. Shaneson</i>	1722
Rare Event Simulation of Small Noise Diffusions <i>E. Vanden-Eijnden and J. Weare</i>	1770
Author Index	1805
Volume Contents	I

